

DIRECT MINIFILER™ AMPLIFICATION OF DEGRADED DNA DATABASE SAMPLES

Amy M Gerow, Hollie M Valentine

Arizona Department of Public Safety, Central Regional Crime Laboratory, Phoenix, AZ

As DNA databases continue to age, the samples they are comprised of age as well. Due to slow degradation, especially at the larger core CODIS loci, these samples can present a challenge when CODIS hit confirmation analysis is required. We established a direct MiniFiler™ (Applied Biosystems) amplification method of DNA database samples collected on Bode Buccal DNA Collectors™ that utilized PunchSolution™ and 5X AmpSolution™ (both Promega Inc).

This method is applicable not only to older degraded samples, but also to problem database samples of more recent collection while eliminating the need to proceed through traditional extraction steps. Quality control samples of blood on Whatman™ blood stain cards have also been successfully amplified through this method.

Though the NDIS approval of expanded locus direct amplification kits has occurred, the MiniFiler™ direct amplification, along with Identifiler® Direct amplification, gives more information as to the current FBI core CODIS loci. When comparing to previously analyzed samples or to current forensic profiles, the CODIS core 13 loci are necessary for effective evaluation and interpretation. Additionally, this method is compatible with already established genetic analyzers (e.g. Applied Biosystems 3130xl) making it easier to implement for many laboratories.